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Our troubled local waters

SB Valley drinking supply has soiled past

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Water, arguably the San Bernardino Valley's greatest natural resource, is under assault from every direction.

Clear and pristine, it finds its way down from the rain and snow that fall on the local mountains and fills a vast underground aquifer with the capacity of Shasta Lake.

The assailants are chemicals left over from World War II, the Cold War and the space race. They also are byproducts of industry, municipal waste and petroleum storage.

These apocalyptic horsemen have other names:

Perchlorate.

Trichloroethylene (TCE).

Methyl Tertiary Butyl Ether (MTBE).

Tetrachloroethylene (PCE).

Efforts to clean the region's groundwater have already taken years and tens of millions of dollars. It will take millions more and several decades before the underground treasure is again chemical-free.

Aside from health concerns, the specter of water rationing also looms.

California is in the fourth year of a record-breaking drought. If it continues, and either the government or suspected polluters don't come up with pots of money for treatment, officials aren't sure they can meet the water demand next summer.

Here's what the chemicals do or are suspected of doing:

Perchlorate, used in rocket fuel, fireworks, air-bag inflators and flares, is known to reduce thyroid function. Scientists worry that even low levels of exposure can harm developing fetuses, babies and their mothers, as well as anyone with thyroid problems.

TCE is an industrial solvent commonly used for cleaning grease. It's suspected of increasing the cancer risk in

humans.

PCE is used in dry cleaning and as an industrial solvent. It's known to cause liver and kidney damage after long exposure and may also contribute to cancer.

MTBE is an additive to gasoline designed to help clean the air. It wound up polluting groundwater. It also may pose a cancer risk to humans.

San Bernardino Valley residents can generally be confident about the safety of the water coming out of their taps. The domestic water supply is treated and tested extensively to ensure its safety.

But perchlorate lurked in the groundwater for decades before scientists even realized it was there. There's no way to know how much of it slipped into countless cups of coffee, glasses of water or bottles of baby formula in the decades before it was discovered.

That's the scary part.

"We really don't have any way to tell as far as the past goes,' said Anthony "Butch' Araiza, general manager of the West San Bernardino County Water District, which serves more than 50,000 customers in portions of Rialto, Bloomington and Riverside. "We could have had perchlorate in the system for a number of years.'

Between the emerging perchlorate threat, which has already contaminated 75 wells in San Bernardino County, and pollution from the common solvents, state and local water officials are wrestling with a water supply under siege.

Rialto, Fontana, Colton

A dusty, scrubby stretch of land just north of Highland Avenue in Rialto was far from houses and seemed perfect for noisy, dirty industrial operations 60 years ago.

Today, it's home to a complex, notorious case of pollution. A perchlorate plume has stretched more than six miles to the southeast. It has even forced the shutdown of the well serving the county-owned Arrowhead Regional Medical Center in Colton.

Regulators have plenty of suspects, including the Army, the county of San Bernardino, B.F. Goodrich Corp., Kwikset Corp. and numerous existing and defunct fireworks companies.

If expensive treatment equipment is not in place soon at wells, the region faces a potentially serious water shortage in the summer, said officials of the West San Bernardino County Water District, Fontana Water Co. and the cities of Rialto and Colton.

For example, the four affected wells belonging to the West San Bernardino County Water District can produce more than 11 million gallons per day, roughly a third of what the agency would expect to need during a hot summer day.

"This is a big complex problem. It's going to take a lot to solve,' said Kurt Berchtold, assistant executive

director of the Santa Ana Regional Water Quality Control Board, based in Riverside.

The regional board oversees water quality in the 2,800-square-mile Santa Ana River watershed, which stretches from the crest of the local mountains to the ocean in Orange County.

A tangled web

The problem for regulators is the number of companies and agencies that have used the area the past 60 years, making it difficult to pin the blame on one or more parties and force payment for cleanup.

In 1941, the federal government purchased about 2,800 acres in the area and built numerous bunkers and storage areas for munitions. Part of the county-owned Mid-Valley Landfill in Rialto lies where the bunkers were.

From 1950 to 1957, West Coast Loading Co., which manufactured pistol and parachute flares, operated on 160 acres immediately northeast of the landfill. Records show the company used or handled large quantities of perchlorate.

Kwikset bought West Coast Loading and later disbanded. The contentious legal question now is whether it's the same Kwikset Corp. now affiliated with the Black & Decker family of companies.

Attorneys for today's Kwikset, the lock maker, say the older Kwikset disappeared in 1958 and that only its name was resurrected. This means, they argue, that today's company should bear no liability.

Companies and landowners can sometimes be held responsible for pollution caused by previous owners or by companies that are connected to each other.

B.F. Goodrich Corp. worked on solid rocket fuels at the same 160-acre location from 1957 through 1964.

Though Goodrich joined Kwikset in successfully fighting a cleanup order issued in June by the regional water board, the company is now negotiating with the four water agencies to pay for some treatment of the contaminated water.

Several fireworks companies operated in the same area and may have contributed to the problem, though many are out of business, regulators have found.

County also a suspect

The county of San Bernardino is also a suspect because it owns the Mid-Valley Landfill, where some of the military's old storage bunkers were located.

All companies and agencies suspected of contributing to the problem, including the county and the Army, have been ordered by the regional water board to assist with the investigation. Many, like Kwikset, continue to fight even that requirement, and could eventually face $1,000-a-day fines if they don't comply.

The county so far has spent $1.5 million drilling wells and taking samples to see if the landfill is part of the

problem. County officials said recently there is contamination there, but not in quantities sufficient to send a plume of pollution more than six miles.

Regional water board officials disagree with the county's conclusion.

Officials say they hope the county can avoid being labeled a responsible party and avoid the huge costs that would follow.

"Our focus is let's find the end of the plume and work with the water agencies to find a solution,' said Peter Wulfman, the county's solid waste director.

The state this year lowered its "action level' for perchlorate from 18 parts per billion to 4 parts per billion, based on the flurry of research done in recent years. But "action level' simply means local governments must be notified when water exceeds that level. There is no requirement that wells be shut down if they exceed the action level.

One of the wells nearest the Rialto landfill recently recorded perchlorate levels of 820 parts per billion, 205 times the state recommendation.

The well with the high level of perchlorate has been out of operation for many years, but a few of the other 21 wells contaminated by the plume continue to operate. That water is blended with clean water to dilute the contaminants.

Drinking water standard

An enforceable drinking water standard for perchlorate is due to be established by the state in 2004. The federal government isn't sure when it may establish its own standard.

Wulfman argues that most of the perchlorate contamination is traceable to defense-related work that and cleanup should be the federal government's responsibility.

"Rocket fuels are for national use,' he said. "Nationwide funds should be used. The little people here can't afford to pay for this mess.'

Not everyone is waiting for a suspect with deep pockets to get fingered.

Some water officials are ready to move forward with treatment because they don't have other supplies they can easily tap.

This month, the West San Bernardino County Water District was awarded contracts worth more than $1.3 million to start cleaning perchlorate from two of its contaminated wells.

At least the district has a $750,000 grant from the state to start with. Unless the government or the suspected companies jump in, the cost may fall to the ratepayers, Araiza said.

But treating the water will nearly quadruple its cost from the $110 it costs to pump an acre-foot of water to

$455 when the cost of treatment is included. An acre-foot is about 326,000 gallons or the amount used by two typical families in a year.

"We know the problem is here,' Araiza said. "We need help for our customers immediately.'

Politicians, community leaders and water officials have all jumped into the fray demanding quick action.

State Sen. Nell Soto, D-Ontario, created a perchlorate task force, which has been agitating for more aggressive action.

Sen. Dianne Feinstein, D-Calif., this month wrote to the secretaries of defense and interior asking for help with the perchlorate pollution and specifically mentioned the Inland Empire.

That political attention has its benefits.

"It's through Nell Soto we got the money ... (for treatment), and that wouldn't have happened without us being obnoxious,' Araiza said.

Mentone, Redlands

A former rocket fuel plant in Mentone, which operated from the early 1950s through the mid 1970s, helped put the earliest U.S. satellites in orbit.

It was also the starting point of a 10-square-mile plume of perchlorate and TCE contamination that has affected wells serving Redlands, Loma Linda and Riverside.

The pollution also triggered a long-running lawsuit against aerospace giant Lockheed Martin by about 800 residents of Mentone and Redlands who believe their health problems were triggered by contamination from the plant.

The Mentone-Redlands problem had a tumultuous and contentious beginning similar to what's now happening with the north Rialto situation.

Originally, the main concern of regulators and the residents in the lawsuit was TCE. Lockheed argued there were several other possible culprits because TCE is so common.

The suit was filed in 1997, and that same year, state scientists developed a more sensitive perchlorate test. Because perchlorate is not commonly used, regulators finally had something close to a smoking gun, and residents had an additional chemical menace.

Eventually Lockheed Martin, which operated the plant from 1961 until it closed in 1974, agreed to pay for water to make up for closed wells. The company also paid for the area's first perchlorate treatment equipment, which recently started operating on wells in San Bernardino that pump water for the city of Riverside.

"Lockheed Martin could have given us hell, but they took that responsibility,' said Kamron Saremi, an engineer with the Santa Ana Regional Water Quality Control Board. "Millions of dollars later we have wells

being treated, and new production wells have been dug.'

The company estimates it has spent more than $60

million on new wells and efforts to clean the water.

Strong disagreement

While Lockheed touts its efforts to be a good neighbor, those suing Lockheed strongly disagree because the company has fought the lawsuit at every turn.

"They lied, stole and cheated their way through 40 years,' said Walter Lack, one of the attorneys working on the suit against Lockheed.

For those who sued, the case is a search for answers and solutions.

"I hoped they would do something to clean it up,' said 43-year-old Mentone resident Patty Nymeyer, a plaintiff in the Lockheed suit.

She was diagnosed in 1994 with non-Hodgkins lymphoma, a cancer that's unusual in women that age, she said. She's again going through chemotherapy.

The residents' lawyers contend that many of them were made ill by the pollution caused by Lockheed.

"If they were dumping something on the ground, and you know it's harmful, they need to be responsible,' Nymeyer said.

Lockheed is treading the tricky ground between admitting it was responsible for the pollution, while denying it is liable for any health problems.

"We will vigorously defend ourselves in any lawsuit claiming we have harmed local residents,' said Gail Rymer, a spokeswoman for Lockheed.

The company argues any exposures were at levels that were too low to cause harm.

An issue in the case even went to the state Supreme Court this month.

Lockheed attorneys had managed to quash a possible requirement that the company pay for future medical testing of worried residents. Attorneys for the Mentone and Redlands residents went to the state Supreme Court to try to reinstate the possible testing requirement.

A decision on that issue is expected in a few months. As for the rest of the case, it's not clear when it may get in front of a jury, though attorneys hope it will be next year or in 2004.

Lockheed also joined Kerr-McGee Co., thought to be partly responsible for perchlorate contamination in the Colorado River, in challenging the proposed public health goal for perchlorate under consideration by the

state.

A court ruled this month that the proposal must go through a new round of scientific review, possibly delaying implementation of a drinking water standard beyond the Jan. 1, 2004, deadline established by the Legislature.

Rialto-Colton tank farm

Sometimes the polluter isn't hard to find at all. The extensive petroleum contamination in the water beneath the Rialto-Colton tank farm could only have come from one place.

The 108-acre site just south of Interstate 10 on Riverside Avenue can hold more than 60 million gallons of gasoline, diesel fuel and jet fuel. It's distributed from there on trucks and through pipelines to suppliers throughout the region.

Decades of spills and leaks have left petroleum products floating four-feet thick in some spots on top of the groundwater.

A plume of MTBE contamination has moved more than 1,000 feet off-site, passing under an auto salvage yard to the south and approaching two production wells owned by the West San Bernardino County Water District. Both wells continue to test clean.

For years, the tank farm's owners, Kinder Morgan Energy Partners, and regulators at the regional water board have been working to clean up the water beneath the tank farm, though they occasionally disagree over how much should be done and how quickly.

Much of the cleanup includes vacuuming fumes from the soil and pumping out petroleum products that seeped into the ground. Roughly a half-million gallons of petroleum products already have been pumped from the soil. Additional monitoring and extraction wells are planned.

Camp Ono and Superfund

In the early 1940s, the military established Camp Ono in what would become the Shandin Hills areas of north San Bernardino, where northbound motorists on Interstate 215 pass a golf course and the exit to Cal State San Bernardino on their way to the Cajon Pass.

Originally designed as a supply depot, it eventually was used to house Italian prisoners of war from the North Africa campaign, local historian Nick Cataldo said.

When TCE and PCE began showing up in wells across the northern part of the city in the early 1980s, it was unclear who might be responsible. An airport and other industrial users were suspected, but regulators eventually concluded the long-forgotten Army base was responsible for an underground plume that split into two branches.

"We lost a third of our wells,' said Stacey Aldstadt, deputy general manager of the San Bernardino Municipal Water Department. "At the time, it was a grim situation.'

The Army continues to deny responsibility, but it was another branch of the federal government that rode to the rescue with a fat checkbook.

The U.S. Environmental Protection Agency declared the Shandin Hills problem a Superfund site in 1989, meaning tens of millions of dollars in cleanup costs wouldn't have to come out of the pockets of San Bernardino residents.

"They did San Bernardino a big favor when they came in to treat it or our customers would have had to pay for it,' Aldstadt said.

The north San Bernardino pollution problem is one that is certain to disappear in the coming decades.

The solution, decided upon in the mid 1990s, calls for a line of wells to intercept the two branches of the plume as it moves south.

On Waterman Avenue, just north of 30th Street, a series of 16 beige tanks stand like sentinels.

Contaminated water from extraction wells ahead of the eastern plume, called the Newmark plume, is pumped to the plant, where it runs through the tanks full of granular activated carbon, which pulls the solvents from the water.

Ahead of the western branch of the plume, called the Muscoy plume, two wells have been dug, though not fitted with pumping equipment yet, and three more will be added. A treatment plant on 19th Street is being expanded to add tanks of carbon that will clean the water. The treated water goes back in the system for drinking.

The wells are being built in residential neighborhoods. In some cases, fake houses will be built around the equipment.

And with the water supply for the entire region threatened by pollution, there's an unexpected benefit from the San Bernardino situation. All those new wells for the cleanup mean a lot more pumping capacity to help provide water as the area grows.

"It'll produce far more water than we'll need in winter, but we'll have a water supply for the future,' Aldstadt said. "As much as a bad thing can be a good thing, this is a good thing.'